CLAIMS:

1. A method of fabricating a segmented contactor comprising:

forming a contactor unit;

testing electrically said contactor unit; and

assembling said contactor unit which has passed said testing with a substrate to form said segmented contactor.

2. The method of claim 1 further comprising retesting said contactor unit after said assembling.

3. The method of claim 1 further comprising forming a plurality of contactor units, testing each of said plurality of contactor units, and assembling said tested contactor units which have passed said testing with said substrate to form said segmented contactor.

4. The method of claim 1 wherein said contactor unit has a first side and a second side and a plurality of electrically conductive areas on said first side.

5. The method of claim 4 further comprising testing a device on a wafer with said segmented contactor, wherein said testing includes electrically connecting each of said plurality of electrically conductive areas on said first side of said contactor unit with a corresponding one of a plurality of electrically conductive terminals on said device.

6. The method of claim 5 wherein each of said electrically conductive terminals includes a resilient contact element.

7. The method of claim 5 wherein each of said conductive areas includes a resilient contact element.

8. The method of claim 1 wherein said assembling said contactor unit includes:

providing an assembly fixture including a plate defining a contactor position;

placing said contactor unit having a first side and a second side into said contactor position with said first side facing said plate;

applying an adhesive on said second side; and

pressing said substrate onto said adhesive to mount said contactor unit to said substrate.

9. The method of claim 8 wherein said plate defines grooves and the method further comprising inserting guide blocks into said grooves to define said contactor position between said guide blocks.

10. The method of claim 8 wherein said first side of said contactor unit includes a plurality of conductive areas.

11. A method of fabricating a segmented contactor comprising:

forming a plurality of contactor units on a single contactor substrate;

testing electrically each of said contactor units;

separating each of said contactor units from said single contactor substrate; and

assembling said contactor units which have passed said testing to form said segmented contactor.

12. The method of claim 11 wherein said single contactor substrate is monolithic.

13. The method of claim 11 wherein said testing is performed before said separating.

14. The method of claim 11 wherein said testing is performed after said separating.

15. The method of claim 11 further comprising retesting said contactor units after said assembling.

16. The method of claim 11 wherein said testing is performed after said assembling.

17. The method of claim 11 wherein said assembling includes connecting one of said contactor units with another one of said contactor units.

18. The method of claim 11 further comprising testing a plurality of devices on a wafer with said segmented contactor.

19. The method of claim 18 wherein one of said plurality of contactor units corresponds to at least one of said plurality of devices on said wafer.

20. The method of claim 18 wherein said devices are integrated circuits.

21. The method of claim 11 wherein each of said contactor units has a first side and a second side.

22. The method of claim 21 further comprising attaching a plurality of resilient contact elements to said first side of at least one of said plurality of contactor units.

23. The method of claim 21 further comprising providing a plurality of electrically conductive areas on each of said first and second sides of each of said contactor units.

24. The method of claim 23 wherein said electrically conductive areas on said first side of a respective contactor unit are electrically connected through said respective contactor unit to selected ones of said electrically conductive areas on said second side of said respective contactor unit.

25. The method of claim 24 wherein said contactor unit is an interposer.

26. A method of fabricating a segmented contactor comprising:

forming a plurality of contactor units on a single contactor substrate;

attaching a plurality of electrically conductive leads to one of said plurality of contactor units, wherein said plurality of electrically conductive leads extend horizontally beyond an edge of said one of said plurality of contactor units;

testing each of said contactor units;

separating each of said contactor units from said single contactor substrate; and

assembling said contactor units which have passed said testing to form said segmented contactor, wherein said one of said contactor units includes said plurality of electrically conductive leads.

27. The method of claim 26 wherein said single contactor substrate is monolithic.

28. The method of claim 26 wherein said testing is performed before said separating.

29. The method of claim 26 wherein said testing is performed after said separating.

30. The method of claim 26 further comprising retesting said contactor units after said assembling.

31. The method of claim 26 wherein said assembling includes connecting one of said contactor units with another one of said contactor units.

32. The method of claim 26 further comprising testing a plurality of devices on a wafer with said segmented contactor.

33. The method of claim 32 wherein one of said plurality of contactor units corresponds to at least one of said plurality of devices on said wafer.

34. The method of claim 32 wherein said devices are integrated circuits.

35. The method of claim 26 wherein each of said contactor units has a first side and a second side.

36. The method of claim 35 further comprising attaching a plurality of resilient contact elements to said first side of at least one of said plurality of contactor units.

37. The method of claim 35 further comprising providing a plurality of electrically conductive areas on each of said first sides of each of said contactor units.

38. The method of claim 37 further comprising providing a plurality of electrically conductive areas on each of said second sides of each of said contactor units and wherein said electrically conductive areas on said first side of a respective contactor unit are electrically connected through said respective contactor unit to selected ones of said electrically conductive areas on said second side of said respective contactor unit.

39. The method of claim 38 wherein said contactor unit is an interposer.

40. The method of claim 26 wherein said assembling said contactor units includes:

providing an assembly fixture including a plate defining contactor positions;

placing one of said contactor units having a first side and a second side into a corresponding one of said contactor positions with said first side facing said plate;

applying an adhesive on said second side; and

pressing a backing substrate onto said adhesive to mount said contactor unit to said backing substrate.

41. The method of claim 40 wherein said plate defines grooves and the method further comprising inserting guide blocks into said grooves to define said contactor positions between said guide blocks.

42. The method of claim 40 wherein said first side of said contactor unit includes a plurality of conductive areas.

43. A method of assembling a segmented contactor, comprising:

providing an assembly fixture including a plate defining a holding space;

placing a contactor unit having a first side and a second side into said holding space with said first side facing said plate; and

pressing a backing substrate onto said contactor unit to mount said contactor unit to said backing substrate.

44. The method of claim 43 further comprising forming grooves in said plate, and inserting guide blocks into said grooves to define said holding space between said guide blocks.

45. The method of claim 43 further comprising providing an adhesive on said second side of said contactor unit, wherein said backing substrate is pressed onto said adhesive.

46. The method of claim 43 further comprising testing said contactor unit before placing said contactor unit into said holding space.

47. The method of claim 46 further comprising retesting said contactor unit after said placing said backing substrate onto said contactor unit.

48. The method of claim 43 further comprising attaching a plurality of resilient contact elements to said first side of said contactor unit.

49. The method of claim 43 wherein said plate defines a plurality of holding spaces, and further comprising placing a plurality of contactor units into said plurality of holding spaces.

50. The method of claim 49 wherein at least two of said plurality of contactor units are electrically connected to each other.

51. The method of claim 43 further comprising testing a plurality of devices on a wafer with said segmented contactor.

52. The method of claim 51 wherein said devices are integrated circuits.

53. The method of claim 43 further comprising attaching a plurality of electrically conductive leads to said contactor unit, said leads extending horizontally beyond an edge of said contactor unit.

54. A method of fabricating a contactor unit for use in a testing assembly, said method comprising:

forming at least one tile on a single contactor substrate;

separating said at least one tile from said substrate, wherein said tile has a first side and a second side and a plurality of conductive areas on said first side; and

testing electrically said at least one tile.

55. The method of claim 54 wherein said testing is performed prior to use of said at least one tile in said testing assembly.

56. The method of claim 54 wherein said testing is performed before said at least one tile is assembled in said testing assembly.

57. The method of claim 54 wherein said contactor unit is configured for assembly with another contactor unit for use in a segmented contactor.

58. A method of repairing a segmented contactor assembly comprising:

removing a selected mounted contactor unit from a backing substrate of said segmented contactor assembly;

testing electrically a replacement contactor unit; and

mounting said replacement contactor unit on said backing substrate.

59. A method of testing a plurality of devices on a wafer comprising:

providing a segmented contactor including a plurality of contactor units, wherein each of said plurality of contactor units includes a tile having a first side and a second side, said tile having electrically conductive areas on said first side for contacting corresponding electrically conductive terminals on said devices, said tile further having a plurality of electrically conductive leads extending beyond an edge of said tile;

connecting said plurality of leads to an external testing instrument;

bringing said terminals on said devices on said wafer into contact with corresponding conductive areas on said tiles;

energizing said contactor units; and

performing a test on said devices on said wafer.

60. An electrical testing assembly, which is a segmented contactor for testing a device, said electrical testing assembly comprising:

a substrate;

a plurality of contactor units assembled with said substrate, said plurality of contactor units having been tested electrically prior to being assembled with said substrate to form said segmented contactor; and

a plurality of electrically conductive areas arranged on each of said contactor units configured to be electrically connected to the device.

61. The assembly of claim 60 further comprising a plurality of electrically conductive leads extending from each of said contactor units, said leads configured for connection to an external instrument.

62. The assembly of claim 60 wherein said leads of each contactor unit are contained in a flexible strip, said strip secured to said corresponding contactor unit and extending laterally from said corresponding contactor unit.

63. The assembly of claim 60 wherein each of said contactor units are removably mounted to said substrate.

64. The assembly of claim 60 wherein said contactor units are mounted to said substrate with an adhesive.

65. The assembly of claim 60 wherein said contactor units are mounted to said substrate with a conductive material.

66. The assembly of claim 65 wherein said conductive material is electrically conductive.

67. The assembly of claim 65 wherein said conductive material is thermally conductive.

1 68. The assembly of claim 60 wherein said contactor units are coplanar with each
2 other.

1 69. The assembly of claim 60 wherein said substrate is silicon.

1 70. The assembly of claim 60 wherein said contactor units are made of silicon.

1 71. The assembly of claim 60 wherein said contactor units are made of a material
2 including SiO_2.

1 72. The assembly of claim 60 wherein said contactor units are made of a flexible
2 material.

1 73. The assembly of claim 60 wherein said contactor units are made of an organic
2 material.

1 74. The assembly of claim 60 wherein the materials of said substrate and said
2 contactor units have substantially similar coefficients of thermal expansion.

1 75. The assembly of claim 60 wherein a selected one of said plurality of contactor
2 units is electrically connected to at least another one of said plurality of contactor units.

1 76. The assembly of claim 75 wherein said connected contactor units are connected
2 with wire connections.

77. The assembly of claim 75 wherein said connected contactor units are connected with a flexible circuit.

78. The assembly of claim 60 further comprising an alignment mechanism between said contactor units.

79. The assembly of claim 60 wherein said device is an integrated circuit.

80. The assembly of claim 60 further comprising a plurality of devices.

81. The assembly of claim 80 wherein each of said plurality of devices is an integrated circuit.

82. A contactor unit comprising:

a tile having a first side and a second side and including a plurality of conductive areas on said first side; and

a plurality of leads secured to selected conductive areas, said leads extending laterally beyond an edge of said tile.

83. The contactor unit of claim 82 wherein said leads are within a flexible strip.

84. The contactor unit of claim 82 further comprising a connector on said leads for connecting to an external testing device.

85. The contactor unit of claim 82 wherein said contactor unit is certified for use in a segmented contactor assembly by being electrically tested.

86. The contactor unit of claim 85 wherein said contactor unit is configured to be mounted on a backing substrate, and wherein said contactor unit is electrically tested before being mounted to said backing substrate.